

CLAIMS

1. A method of manufacturing a multi-layer circuit board in which a core circuit board having a circuit pattern thereon and a prepreg sheet having a through-hole filled with conductive paste are laminated, the method
5 comprising:

forming a laminated structure so that a laminated member formed of the core circuit board and the prepreg sheet is sandwiched between a pair of lamination plates, and applying heat and pressure to the laminated structure,
wherein, the lamination plate is selected so as to have a thermal
10 expansion coefficient equivalent to a thermal expansion coefficient of the core circuit board.

2. The method of manufacturing a multi-layer circuit board of Claim 1, wherein the prepreg sheet contains a base and a resin layer impregnated with
15 the base, and a thickness of the resin layer formed on both surfaces of the base is at least 20 μm in total thickness.

3. The method of manufacturing a multi-layer circuit board of Claim 1, wherein the core circuit board has four or more layers.
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4. The method of manufacturing a multi-layer circuit board of Claim 1, wherein the core circuit board is not less than one time as thick as the prepreg sheet.

25 5. The method of manufacturing a multi-layer circuit board of Claim 1, wherein the laminated member further contains metal foil on both surfaces thereof.

6. The method of manufacturing a multi-layer circuit board of Claim 1,
wherein the laminated member is formed in a manner that the core circuit
board and the prepreg sheet are alternately laminated so as to have two or
5 more layers.

7. The method of manufacturing a multi-layer circuit board of Claim 1,
wherein buffer material is disposed at outside the laminated structure; the
laminated structure is placed on a carrying plate; the laminated structure
undergoes heat and pressure through the buffer material and the carrying
10 plate; and a thermal expansion coefficient of the carrying plate equals to a
thermal expansion coefficient of the lamination plate.

8. The method of manufacturing a multi-layer circuit board of Claim 1,
wherein buffer material is disposed at outside the laminated structure; the
15 laminated structure is placed on a carrying plate; the laminated structure
undergoes heat and pressure through the buffer material and the carrying
plate; and the buffer material is formed of a material capable of accommodating
difference in thermal expansion between the lamination plate and the carrying
plate.

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9. The method of manufacturing a multi-layer circuit board of Claim 1,
wherein the prepreg sheet contains a base impregnated with resin and a layer
of the resin formed on both surfaces of the base.

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10. The method of manufacturing a multi-layer circuit board of Claim 1,
wherein the prepreg sheet is a B-staged prepreg in which woven fabric base is
impregnated with thermosetting resin.

11. The method of manufacturing a multi-layer circuit board of Claim 1 further including:

measuring thermal expansion coefficient of the core circuit board; and
5 selecting the lamination plate whose thermal expansion coefficient is equivalent to the measured thermal expansion coefficient of the core circuit board.

12. A method of manufacturing a multi-layer circuit board comprising:
10 measuring thermal expansion coefficient of the core circuit board having a predetermined circuit pattern; and

selecting a lamination plate whose thermal expansion coefficient is equivalent to the measured thermal expansion coefficient of the core circuit board.
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13. The method of manufacturing a multi-layer circuit board of Claim 12, wherein the thermal expansion coefficient-measuring is for measuring thermal expansion coefficient of the core circuit board at least two positions of the circuit pattern on the core circuit board in a range from room temperature to a heat
20 pressing temperature by using a thermo-mechanical measurement apparatus.

14. The method of manufacturing a multi-layer circuit board of Claim 12, wherein the thermal expansion coefficient-measuring is for measuring thermal expansion coefficient of the core circuit board at two or more positions, and the
25 method further comprising:

calculating an average value of thermal expansion coefficient of the core circuit board according to measurement carried out at two or more

positions; and

selecting the lamination plate whose thermal expansion coefficient is equivalent to the calculated average value of thermal expansion coefficient.